Headquarters U.S. Air Force

Integrity - Service - Excellence

Critical Path Planning Tools

(Ver 1.2)

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HQ AFCEE/ERC

AFCEE Technology Transfer Workshop

29 - 31 Jan 01

San Antonio, TX

Critical Path Planning (CPP) Tools

- Identify users and purpose of the CPP Tools
- Present key elements of the tools
- Examine the CPP Tools in a little more detail
- Highlight complementary tools being developed
- Demonstrate the CPP Tools

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CPP Tools
Users and Purpose

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CPP Tool Users

- Base RPMs
- Regulatory Agents
- Community (RABs)
- Service Agents (AFCEE/COE)
- Contractors
- Different users may use different CPP Tools

Purpose of CPP Tools

- **Assist project teams to achieve site closeout more quickly with tools to help…**
  - **Understand complex CERCLA processes**
  - **Promote strategic planning built on required CERCLA processes**
  - **Offer project teams a common understanding of actions needed to move forward**
  - **Identify critical path activities that may cause delays**

Purpose of Critical Path Planning Tools (Cont.)

- CPP Tools help managers identify critical decisions
  - Who owns the decisions
  - What is the decision making process
  - What is the schedule for completing the process
- CPP Tools suggest streamlining options at appropriate points in the CERCLA processes so as to implement more timely action

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Key Elements of the CPP Tools

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Key Elements of CPP Tools

- TOOL #1 - Process Flowcharts present a conceptual overview of CERCLA cleanups
- TOOL #2 - Project schedules (Gantt charts)
  - Identify critical decision points in the process
  - Provide task-by-task critical path scheduling templates
- TOOL #3 - Checklists discuss
  - Management issues for each CERCLA phase
  - Streamlining concepts that suggest alternatives
- The tools are linked electronically
  - Jump from a real project schedule to see the CERCLA process it implements or consider alternatives to streamline the work and jump back to the schedule

Key Elements of CPP Tools *(Cont.)*

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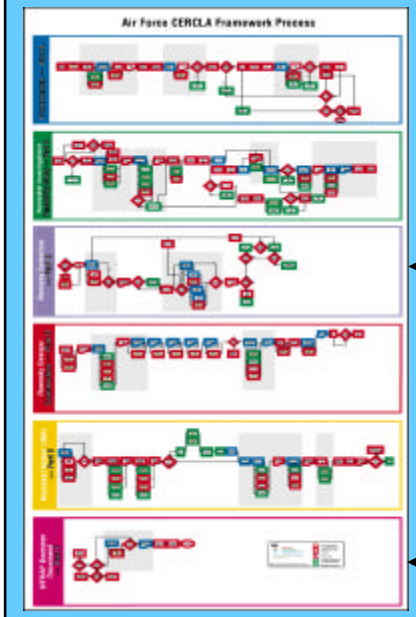
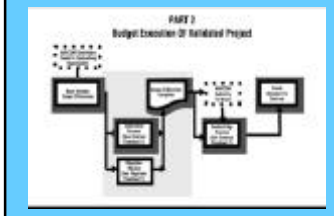
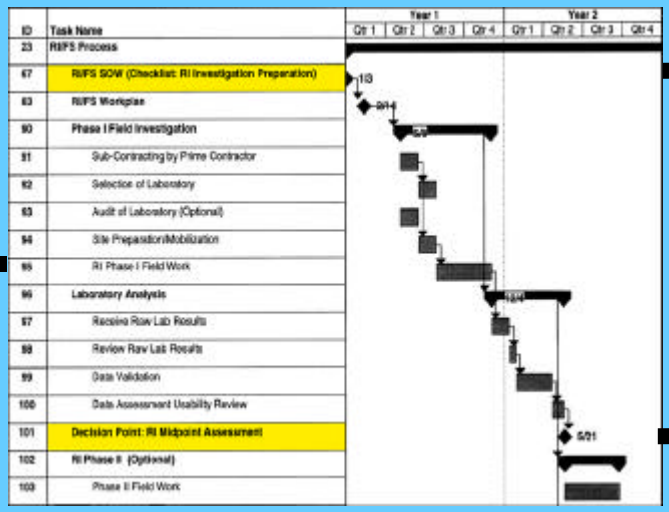
CERCLA Processes

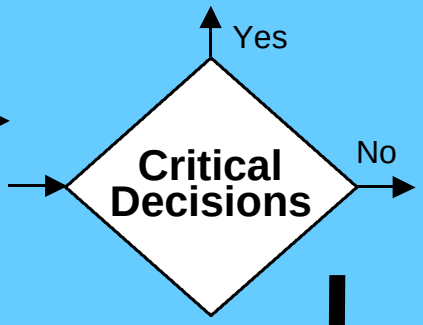


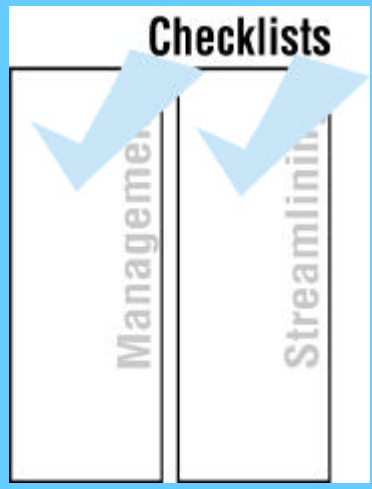


Budgeting - Contracting Regulatory Review

Project Management







Key Assumptions of the Tools

- Focus on CERCLA cleanup process
- Follows a single site from Discovery until No Further Remedial Action Planned
- Regulatory flexibility allows for multiple different routes to cleanup
- "Optional" approaches provided
  - When an alternate path is possible
  - When community relations may be appropriate
  - When budgeting, contracting and regulatory processes may be required

CPP Tool Products

- The CPP Tools may be downloaded from
  - AFCEE Web Page - search products for “Critical Path”
  - AFBCA Web Site at http://208.219.168.5/QuickPlace/CPT/Main.nsf?OpenDatabase
- CERCLA flowcharts viewed on computer or printed
- CERCLA Gantt charts open in MS Project 95, 98, 2000
- Critical Path Planning Tools binder
  - Tabbed notebook with tool components
  - Tools Provided on CD-ROM
  - Poster sized flowcharts

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The CPP Tools In More Detail: Tool Functions and Relationships

TOOL #1 - Process Flowcharts

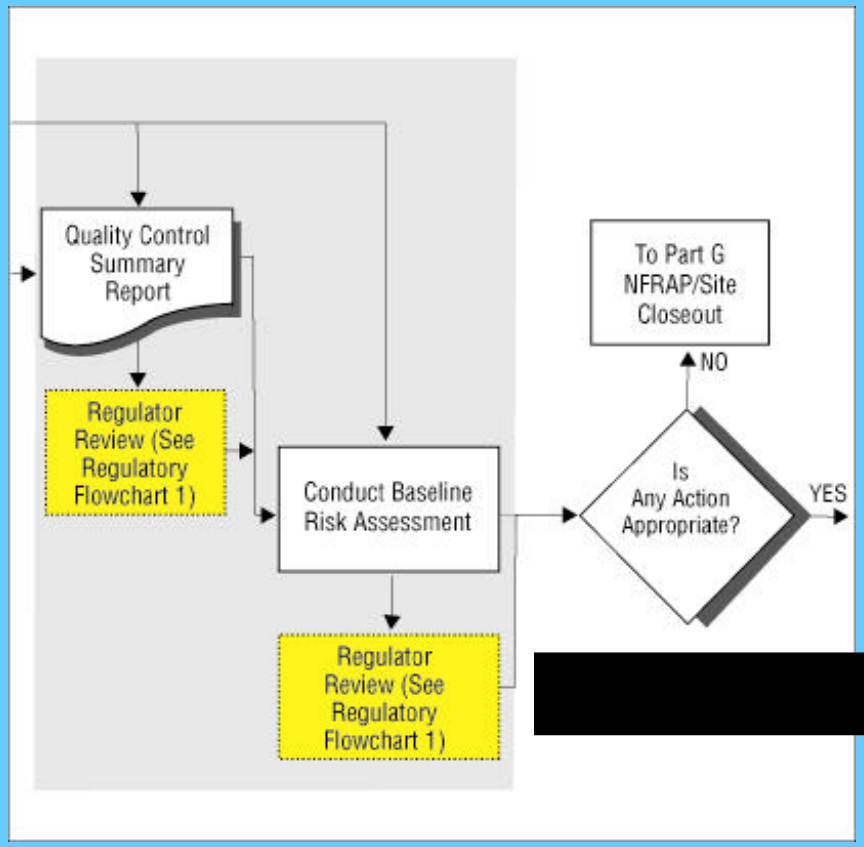
- Four sets of interrelated flow charts
  - CERCLA Process Framework
  - Budgeting
  - Contracting
  - Regulatory Review
- Flow charts are linked to each other and to other CPP Tool elements
- Each chart incorporates regulatory requirements and common practices

PA/SI
RI/FS
Remedy Selection
Remedial Design
Remedial Construction
Removal/ IRA
NFRAP/Close-out

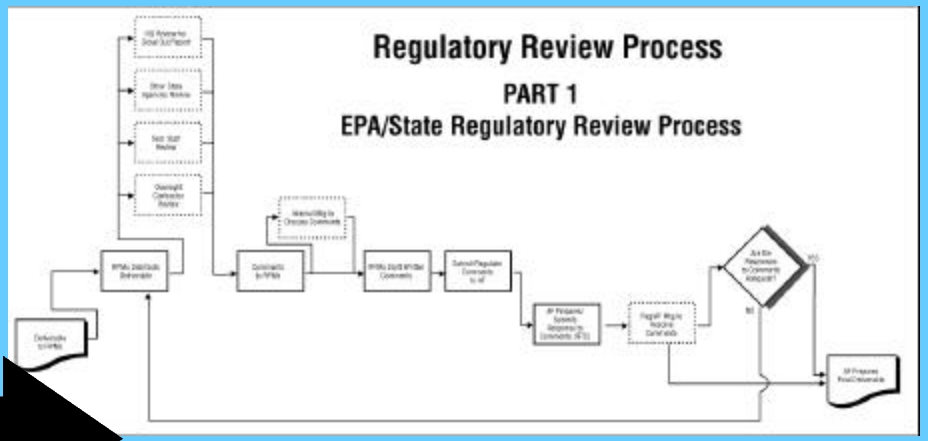
Flowcharts Reflect Common Approaches

- **Flowcharts:**
  - **Offer optional changes to standard processes where appropriate (e.g. removal actions, FS starts, RD starts)**
  - **Show interaction of CERCLA with other processes**
  - **Diagram potential bottlenecks**
  - **Emphasize the importance of collaborative decision-making by showing "Do-Redo" loops**

Flowchart Connections...



CERCLA Framework Links to Other Processes



And to Other Elements of the Toolbox

TOOL #2 - GANTT Charts
(Project Schedules)

- **Project schedules built in Microsoft Project**
- **Tasks are built around the standard process of "primary" and "secondary" deliverables found in the Model Federal Facilities Agreement for NPL Sites**

Primary Documents

- **Assume 45 days for initial regulatory review of draft**
- **Assume Document becomes final after 30 day regulatory review of draft final**
- **Adds potential primary documents to RD/RA stage**

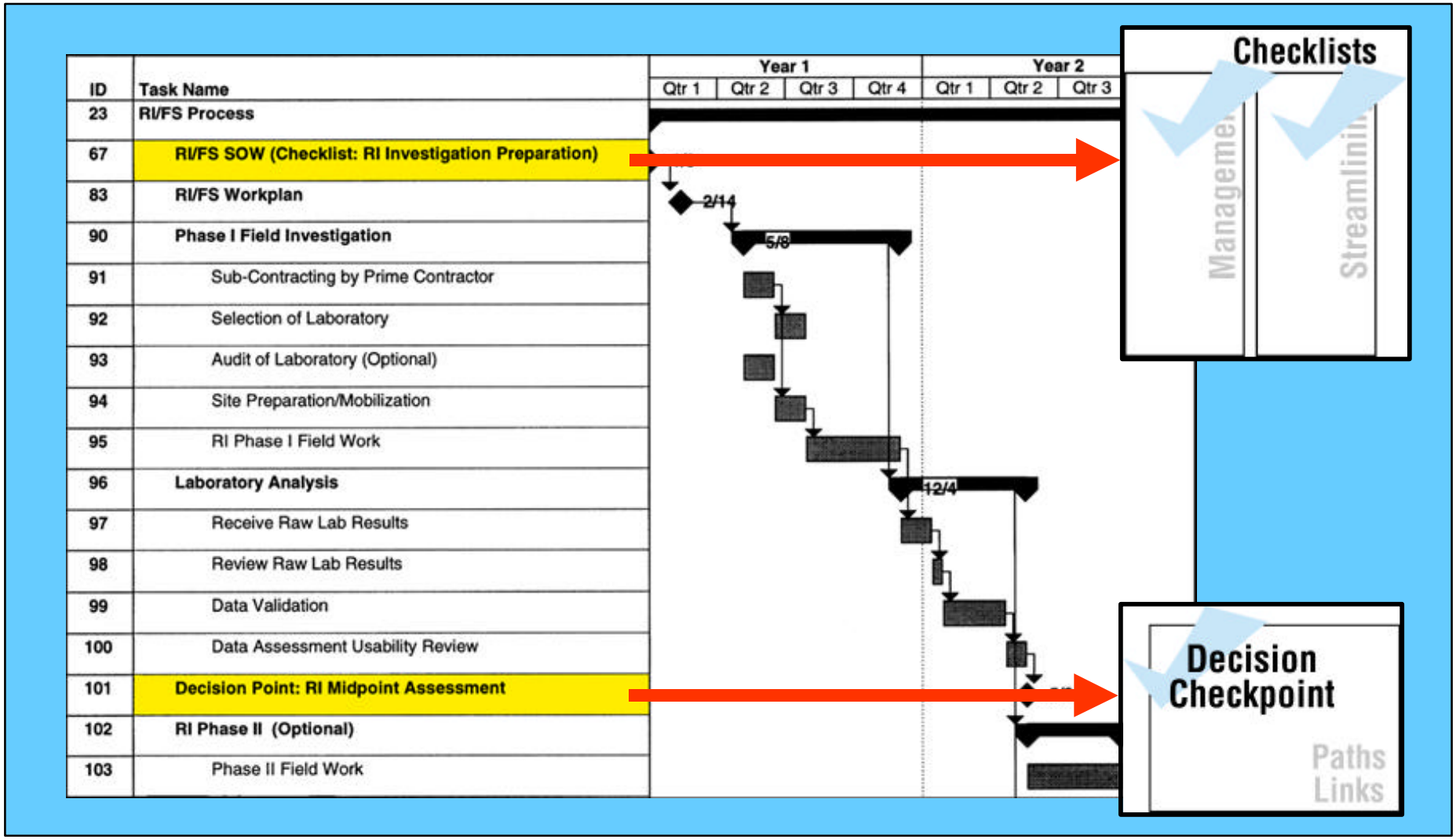
Secondary Documents

- **Assume 30 days for initial regulatory review**
- **Revisions of secondary document usually occur in primary document**

TOOL #2 - GANTT Charts
(Project Schedules)

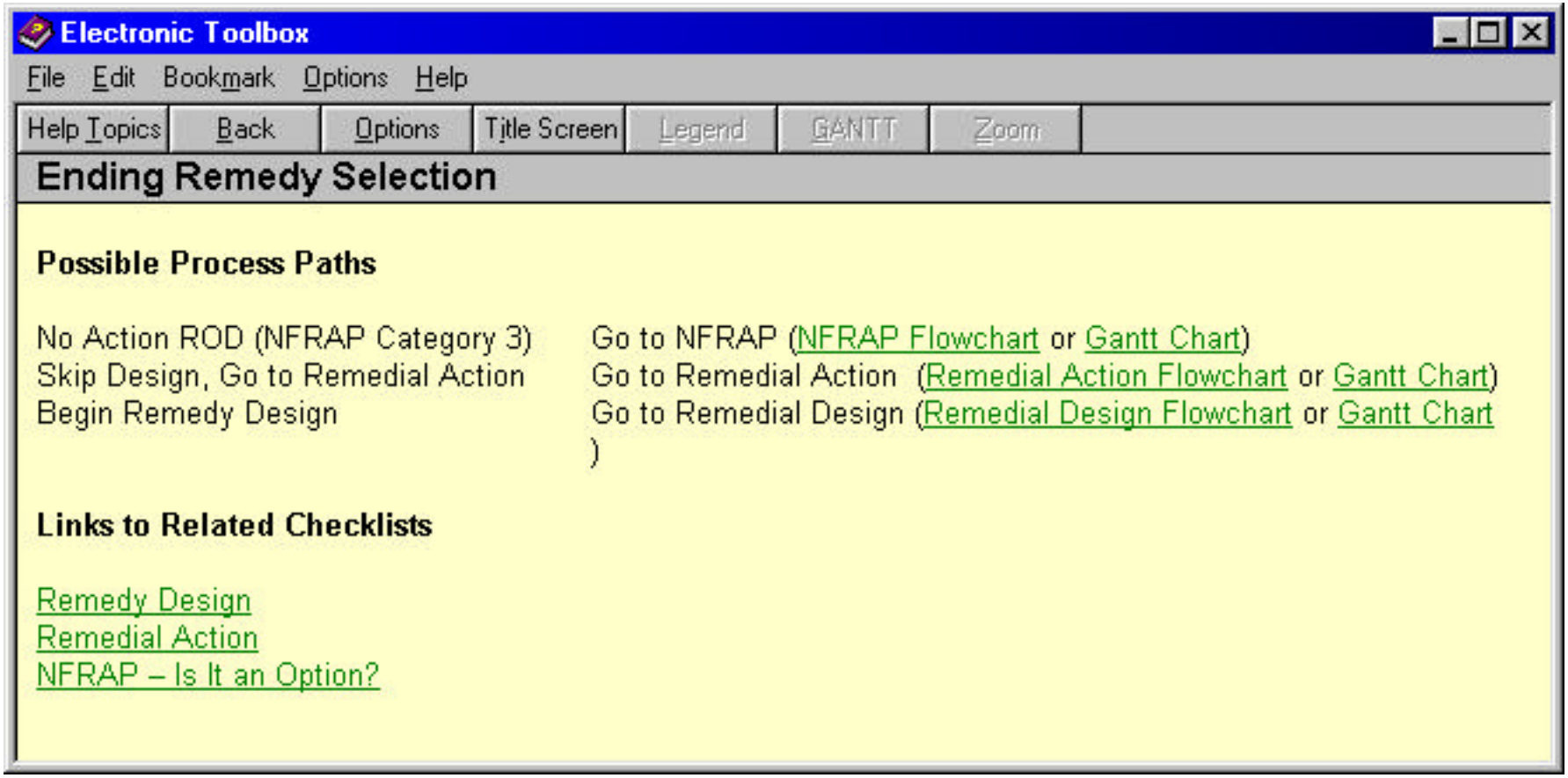
- May be opened in MS Project 95, 98, and 2000
- Templates may be used as the basis of real schedules
  - Tasks have default links and druations
  - Use or delete “optional” tasks identified in templates
  - Add; delete; re-link; or change the duration of tasks in the real schedule as needed
  - Import supplemental contracting & budgeting schedules into real schedules
  - Tiered structure allows users to view Gantt charts at various levels of detail
  - Hot links to critical decision issues, flowcharts, and checklists carryover into real schedules

Gantt Chart Hot Links Help User Plan & Streamline



Example Critical Decision Point

- **Decision point for Ending Remedy Selection**



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TOOL #3 - Checklists

- **Management Checklists facilitate planning**
  - **Management Checklists help plan ahead.**
  - **The next slide is an example of the Remedy Selection Checklist**
- **Streamlining Checklists focus on initiatives**
  - **In the following example, the Remedy Selection Checklist directs us to consider screening initiatives like Rational National Standards or land use directives**

Example Mgmt. Checklist: Remedy Selection

Electronic Toolbox

File Edit Bookmark Options Help

Help Topics | Back | Options | Title Screen | Legend | GANTT | Zoom

REMEDY SELECTION

- **TOPIC #1 - What are the cleanup goals?**
- **TOPIC #2 - Is the community supportive?**
- **TOPIC #3 - Are the reviewers prepared?**
- **TOPIC #4 – Keep thinking ahead.**

TOPIC #1 - CLEANUP GOALS

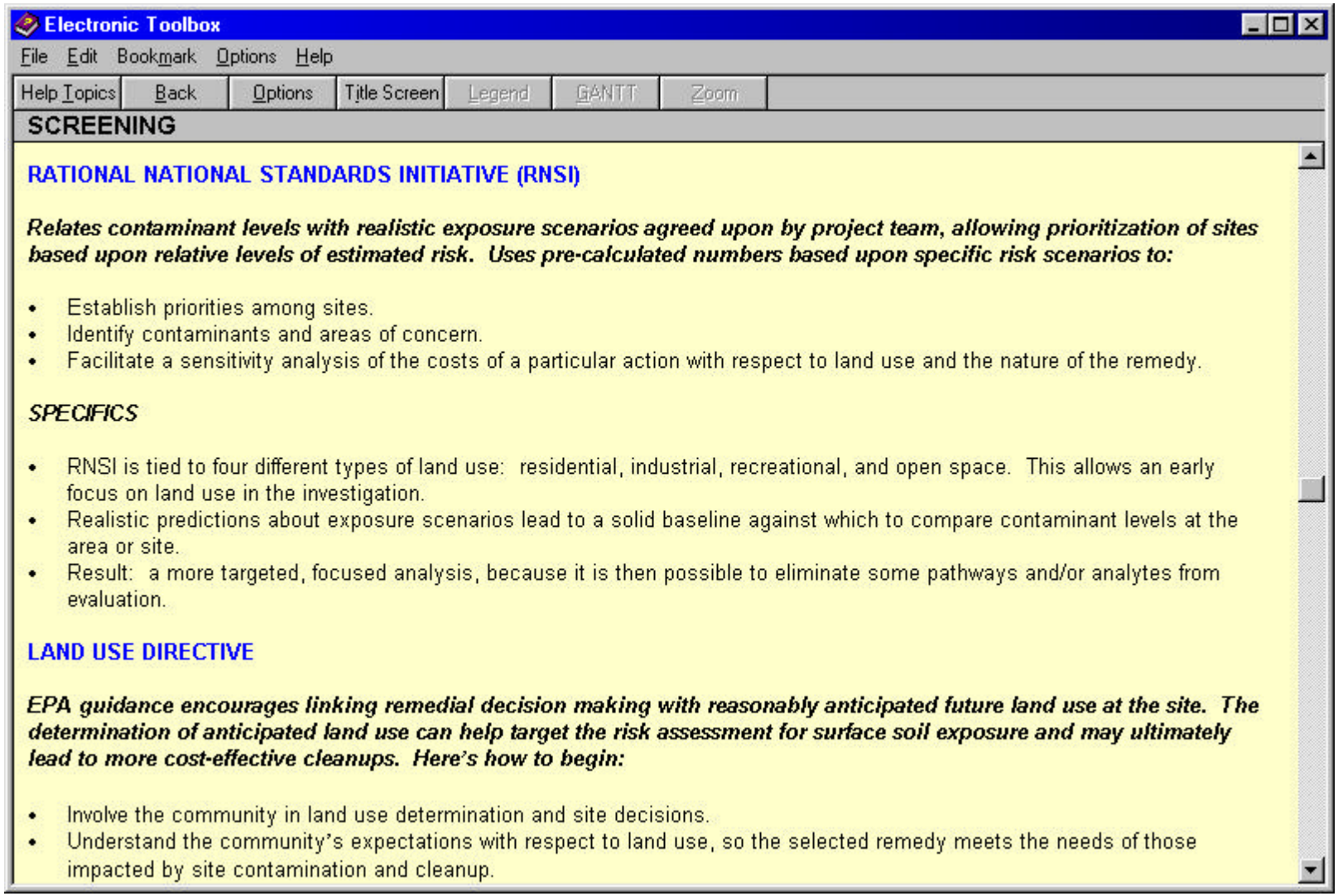
To transition smoothly from FS to Design and Action, review the following issues during Remedy Selection:

- What are the cleanup goals for the site?
- Are cleanup goals adequately or overly protective, given the proposed future land use at the site?
  Streamlining Checklist Link: Screening – RNSI & Land Use Directive
- Given the contaminant and hydrogeologic characteristics at the site, are cleanup goals likely to be attainable? If uncertain, which is likely to change, the Remedy or the cleanup goal itself?

If attainment of cleanup goals is uncertain, given site circumstances and available technologies, build contingencies into the Decision Document to reflect this possibility. This might include the following:

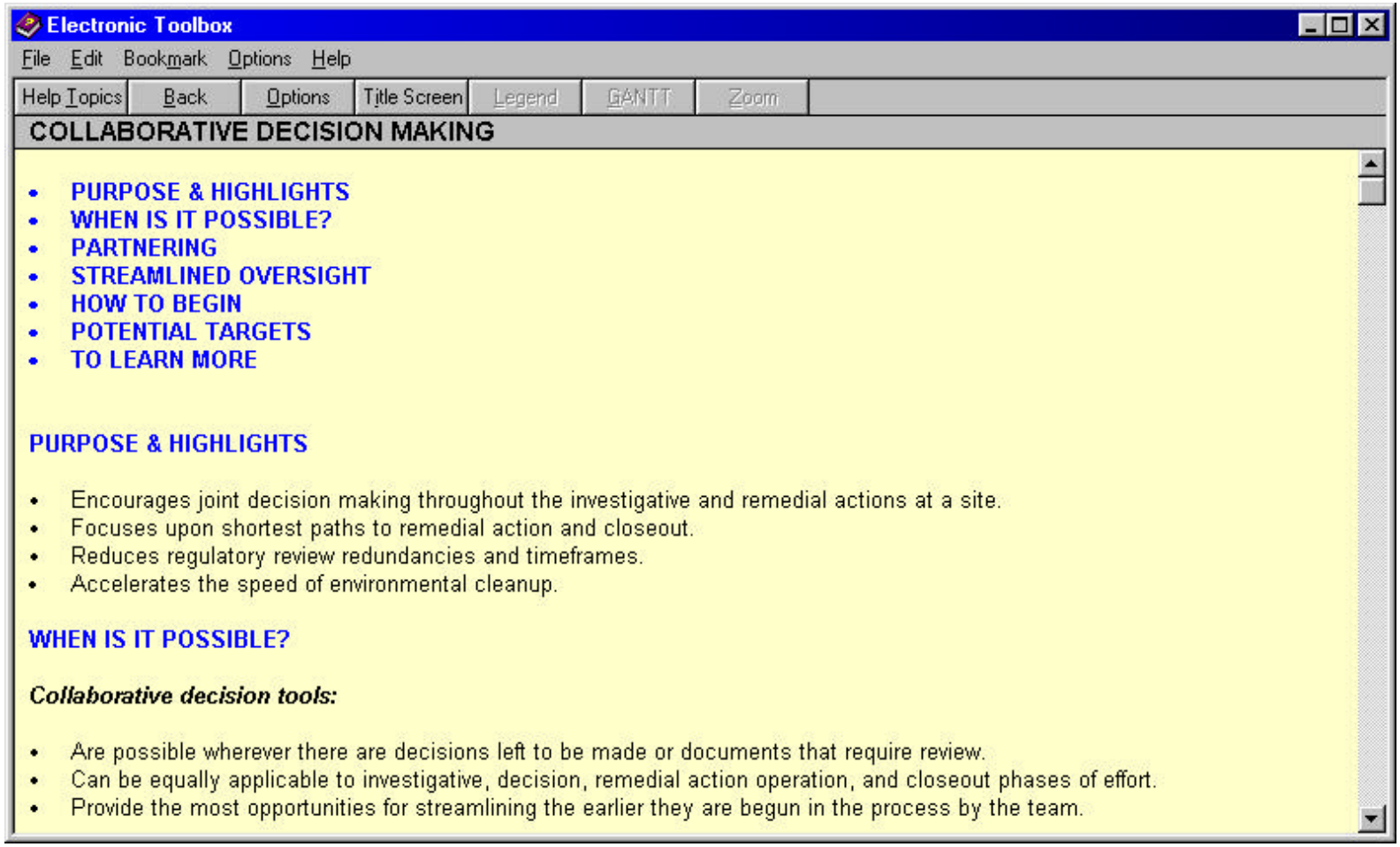
- Incorporating decision-tree analysis points into the ROD and contingencies based upon the outcomes. For example, remedies may include capping and groundwater extraction, with the contingency that if groundwater goals are not attained in X years, a hot spot removal at the source will be completed.
- Contingency analysis and presentation in the ROD may help eliminate the need for additional documents (including Explanation of Significant Differences and ROD Amendments) in the future.

Streamlining Checklist: RNSI & Land Use Directive



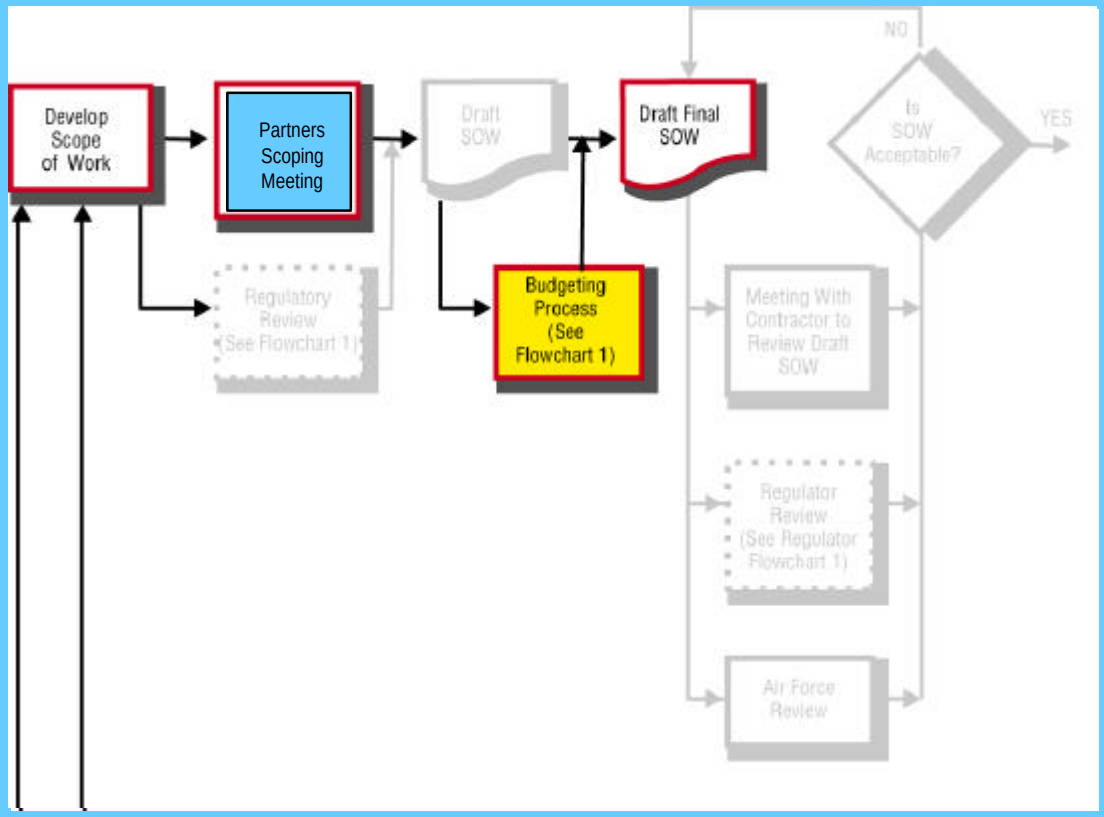
Streamlining Checklist: Collaborative Decision Making

- **Another example of a streamlining checklist initiative**



Using CPP Tools to Streamline

Apply Collaborative Decision Making



Making it Better: A Partnering Approach

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Complementary Tools

Complementary Tools Being Developed

- **Crosswalk**
  - **Integrates Schedule-To-Complete (STC) with Cost-To-Complete (CTC) into project management schedules**
  - **Compares STC dates reported in the AFBCA Management Information System (AFRIMS equivalent) with same data in project management schedules (95% complete)**
  - **Summarizes and reports cost data tracked in project management schedules as the CTC by year by site for building the CTC in the MIS. (85% complete)**

Example Crosswalk Printout

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SS005 Storage Yard Site S-3

	Start Date		End Date	
	Gantt	MIS	Gantt	MIS
PA		07/31/1981		02/28/1982
SI		08/29/1983		01/25/1984
RI	01/04/1999	01/04/1999	10/13/2000	*09/20/2000*
FS	03/09/2000	02/09/2000	03/20/2001	05/02/2001
ROD	05/09/2001	05/02/2001	---	---
RD	03/27/2001	04/25/2001	11/06/2002	10/09/2002
RA-C	08/29/2002	10/09/2002	09/22/2003	03/20/2003

	Start Date		End Date	
	Gantt	MIS	Gantt	MIS
RIP	04/21/2003	03/20/2003	---	---
RA-O	09/22/2003	03/21/2003	09/20/2018	09/28/2018
OPS	09/22/2005	09/30/2006	---	---
RC	09/21/2018	09/28/2018	---	---
LTM	09/20/2018	10/01/2018	09/22/2021	06/09/2021
SC	06/02/2022	06/09/2021	---	---
IRA				

Legend:

01/01/2000	Estimated date
01/01/2000	Actual date
01/01/2000	Elapsed date
01/01/2000	MIS Date differs from Gantt chart date by 60+ days and should be reviewed
01/01/2000	MIS Date occurs in a different FY than Gantt chart date and should be reviewed
01/01/2000	Actual MIS Date differs from actual Gantt chart date and should be reviewed

Note: Phases and milestones that are slipping should be reviewed in the Gantt chart using a "Critical Path" filter in order to identify tasks that could potentially be optimized to minimize schedule delays. Phases and milestones ahead of schedule should similarly be reviewed to determine if subsequent tasks can occur sooner, thereby expediting cleanup.

10:43 PM Sunday, January 21, 2001 **Page 1 of 2**

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CPP Tools and Crosswalk Demonstrations